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REPORT

CD NO.

COUNTRY	USSR	DATE OF INFORMATION	1948
SUBJECT	Economic - Coal mining		
HOW PUBLISHED	Bimonthly periodical	DATE DIST.	8 Apr 1949
WHERE PUBLISHED	Moscow	NO. OF PAGES	3
DATE PUBLISHED	May/Jun 1948		
LANGUAGE	Russian	SUPPLEMENT TO REPORT NO.	

THIS IS UNEVALUATED INFORMATION

SOURCE Planovoye Khozyaystvo, No 4, 1948. (Translation requested.)

DEVELOPMENT OF OPEN COAL MINING

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Coal constitutes three fourths of the fuel consumed by the USSR. In 1940, 166 million tons of coal were mined, or 5½ times more than in 1913.

The Five-Year Plan calls for mining 250 million tons in 1950, which constitutes 51 percent gain over prewar level.

Despite complete destruction by the Germans of the Donets coal field and the Moscow coal field, which together accounted for two thirds of all coal mined before World War II, the prewar level of mining was attained in 1947.

The first open coal mining on an industrial scale was organized at the Bogoslovsk field in the Urals. This field produced 185,000 tons in 1913. At the end of the First Five-Year Plan, the output had been doubled. Large-scale open mining was begun at the Raychikhinsk field in Khabarovsk Kray in 1933. Also, in the early 1930s the Korkino field in the Urals was discovered and found suitable for open-method mining. Thickness of the stratum in this field is 160 meters, widest in the USSR. By 1937, about 700,000 tons of coal were being extracted from this field each year.

Extraction of coal by open methods amounted to 2,448,600 tons in 1937, and to 6,308,700 tons in 1940.

The amount of open mining doubled during World War II. Two thirds of this increase may be attributed to the opening of new fields in the Urals. Largest of these new mines is the Volchanskiy field in the Sverdlovsk region. In addition, two large mines were put into operation during World War II at Karaganda, and another at the Raychikhinsk field in Khabarovsk [illegible].

Rate of increase has been greater in open mining than in conventional subterranean mining. Open mining constituted 1.9 percent of USSR mining in 1937; by 1940 this had risen to 3.8 percent, and by 1945 to 11.9 percent. In the eastern coal fields, open mining increased from 6.3 percent in 1937 to 11.2 percent in 1940, and to 21.7 percent in 1945.

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Productivity of labor in open mining is 2.5 to 3 times as great as that in shaft mining.

Cost of open coal mining is about one third that of shaft mining. In the eastern regions it was 35.7 percent cheaper than shaft mining in 1947.

Current cost of construction of open pits is lower than the cost of shaft construction by the factors indicated: Urals, 2.5; Karaganda, 1.4; Cheremkhovo, 1.5.

A number of coal pits with an output of 300,000-600,000 tons annually were constructed during World War II. Construction time for these pits averaged one year. An ordinary shaft with this output requires 2-3, and sometimes more years to build.

Excavation equipment in operation in 1945 was 2.3 times that operating in 1940. The total capacity of bucket excavators was five times as great. By the end of the war, 3.2 times as many coal cars were operating in the pits as operated before World War II.

Productivity of labor is still low because of poor use of equipment and transport. Organization of overhaul and maintenance of excavating equipment is likewise unsatisfactory. Because of such deficiencies, the coal output from strip mines of the eastern regions during the first half of 1948 was 6 percent below plan. The 1947 plan was also not fulfilled.

The largest coal fields in the USSR suitable for open mining are in the eastern regions. These include the Volchanskiy and Bogoslovsk fields on the eastern slopes of the Urals, the Korkino field in the Chelyabinsk region; the Babayevo, Mayaki, Voroshilov, Tyul'gan and others in Bashkir ASSR; the Cheremkhovo, Irsha-Borodino, Nazarovo and others in Eastern Siberia; the Raychikhinsk in the Far East USSR; the Angren in Central Asia, the Irtysh in Kazakhstan and others. Each of these fields has vast supplies of coal suitable for open mining, the reserves estimated into billions of tons.

In addition, the USSR has smaller fields having several million tons suitably located for open mining. These include the Teniz, Korzhunkul'sk, the Kyaktinsk and others in Kazakhstan; the Lermontovka field on Sakhalin; and the Lake Gusinoye field in Buryat-Mongol ASSR. Small open-pit operations should be undertaken at a number of fields where conventional shaft mines are being operated. Examples of this are the Krasnoprud, Novoserglyevka and Prokop'yev pits in the Kuzbass.

Open mining fields in European USSR include the following: the Baydakovsk, Semenovka-Golovkovsk, Masherino-Svetlopol'skiy, Verbolozovskiy and Zolotarevka fields in the western Ukraine; the Khristofor and Veselo-Termovskiy fiels in the Dnepropetrovsk region; and the Yurkovka field in the Kiev region.

Most fields suitable for open mining, however, are either not yet in operation or are only now having pits constructed.

The only industrial-scale strip mining now being carried on is in the Korkino, Bogoslovsk and Volchanskiy fields in the Urals; the Raychikhinsk fields in Khabarovsk Kray; and the Karaganda and Cheremkhovo fields in central Asia.

Construction of pits is underway at Veselo in the Urals; Nazarovo and Irsha-Borodino in eastern Siberia; in the Kuzbass; and in Baydakovsk, Semenovka-Golovkovsk and Yurkovka in the western part of Ukrainian SSR.

Because of geological conditions some coal fields can be opened for large-scale open mining in a relatively short time. Included in this group are the lignite fields in Bashkir ASSR, the Irtysh field in Kazakhstan, the Angren lignite field in central Asia and the lignite fields in the western parts of Ukrainian SSR.

Deposits in the Bashkir ASSR fields are estimated at several hundred million tons. The postwar Five-Year Plan calls for broad development of open mining in this region. The coal is important for the industry, power plants and transport in the southern Urals region.

The Irtysh field is the largest field suitable for open mining. The large its can be constructed there.

The Angren field in Uzbek SSR is made up of three strata. The width of the bottom stratum is 40-50 meters. A pit is under construction there at present. The output of this mine, when developed, will be greater than the present entire output of central Asia. Central Asia, Tashkent and Tashkent's industrial area will be supplied from this mine.

The Five-Year Plan specifies the setting up of coal industry on the right bank and western regions of Ukrainian SSR. The opening of 13 shafts and pits with a potential output of 9,700,000 tons annually is planned. This will make possible a decrease in the amount of Donets coal shipped into western Ukrainian SSR.

Further development of open coal mining will depend to a great extent on the supplying of the mines with equipment. Among other things, the production of high power excavators, electric locomotives, railroad cranes and drag lines must be organized. The Diesel engine must be put into wide use in the rail transport of the pits. The production of electrical equipment for the new machinery is very important.

Coal mines are suffering from lack of spare parts, especially for excavators. Construction of the Korkino Locomotive-Excavator-Rail Car Repair Plant in Chelyabinsk Coal Combine is nearing completion. This will help solve the problem of equipment repair.

Hydromechanization was first put into practice at the coal pits in 1943. The amount of stripping work accomplished by means of hydromechanization was 470,000 cubic meters in 1943, 873,000 cubic meters in 1944, 1,393,000 cubic meters in 1945, 1,800,000 cubic meters in 1946 and 2,750,000 cubic meters in 1947.

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